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ABSTRACT

The cost effectiveness of using certified mail as a device to raise response rates in mail surveys is investigated. Of the three optional services offered by the Post Office when sending certified mail, the base certified rate was recommended, since the Post Office often failed to perform the more expensive services. A sample of 120 students from 30 schools was used, with two males and two females participating from each school. Continuing for 19 days after the mail-out date, the experiment randomly assigned people from the same sex and school to either a certified mail group or a first-class mail group. The overall difference in response rates appeared to be appreciable. The cost effectiveness of using certified mail for a 10 item and a 150-item questionnaire was then formulated. The results indicated that the most cost effective plan was the use of certified mail with the long questionnaire and first-class mail with the short one. It was recommended that the cost effectiveness of mail survey plans be calculated prior to their implementation. (SE)

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RESEARCH MEMORANDUM

THE USE OF CERTIFIED MAIL IN MAIL SURVEYS

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The Use of Certified Mail in Mail Surveys

One frequently used technique that attempts to raise response rates in mail surveys is sending survey material by certified mail. Astin and Panos (1969) have reported the effectiveness of certified mail as a device to raise response rates to a level significantly higher than those obtained with first class mail.

Certified mail was used extensively in mailing survey materials to participants in the National Longitudinal Study of the Class of 1972 (NLS), conducted by ETS for the U. S. Office of Education. Certified mail was used because it was believed that initial response rates with certified mail would be high and thus the cost of follow-up low. A survey plan with two waves of questionnaires then a telephone follow-up to all nonrespondents was used to collect data. Identical plans were used for each mail survey performed in NLS.

Although using certified mail typically has been found to result in higher response rates, it is also a costly and time-consuming procedure. Postage for mailing must be prepared clerically, rather than by automated procedures, and the amount of preparation and record-keeping is doubled. Thus, an experiment was conducted, designed to assess the cost-effectiveness of certified mail. This paper documents the results of that experiment.

Certified Mail

Before proceeding, the various possible options afforded by certified mail should be pointed out, as well as some operational considerations. The cost of certified mail is $0.30 plus postage. When this form of certified mail is used, mail is delivered to the address given, anyone at

that address signs a card indicating receipt of the mail, and that card is then returned to the sender. Two pieces of information must be placed on an envelope prior to mailing. One piece is a certified number and corresponding receipt, that has space for recording the addressee and must be retained for recording purposes. The second piece is the card that is returned when the piece of mail is delivered.

Two optional services are offered with certified mail for additional fees. Both relate to additional return receipt service. One option results in the returned card showing to whom and the date the piece of mail was delivered ($0.15), and the other option results in the card showing to whom, date, and where the piece was delivered ($0.35). Each of the two options can be expanded to include delivery to the addressee only for an additional $0.50.

In this study, certified mail with the option of showing to whom, date, and where delivered was used. Thus, the total mailing cost was $0.65 ($0.30 certified rate + $0.35 second option) plus postage of $0.22 in this case. In future cases where researchers desire to use certified mail, the authors recommend using only the base certified rate. The authors frequently noted that services requested were not performed by the Post Office.

Design

The experiment described in this report was part of a survey of students from 152 high schools, with four students sampled from each school. A subsample of 30 schools was selected to be in the experiment, giving a student sample size for this experiment of 120 people. Within each school sample, there were two males and two females. People of the same sex and

school were randomly assigned to either a certified mail group or a regular mail group. The experiment was continued for 19 days after the mail-out date.

Results

The responses for each design category are given in Table 1. There are 30 subjects in each cell of the table. The entries in the cells represent the actual number of questionnaires returned for that particular combination. A response rate of 41.7% (25 out of 60) was achieved for the certified mail group, and a response rate of 26.7% (16 out of 60) was obtained for the first class mail group. Although chi-square tests indicated that there were no significant differences ($p<.05$) in response between certified mail and first class mail, males and females, and the interaction between the two, the overall difference in response rates appears to be appreciable. The failure to reach significance is most likely related to the small number of people in the experiment, and we will assume response rates approximately equal to the estimates above will be equalled in practice.

Table 1

Responses for Each Design Category

Sex	First Class Mail	Certified Mail	Total
Male	6	12	18
Female	10	13	23
Total	16	25	41

Cost Effectiveness

Suppose it is assumed that the response rates obtained above hold for both mailing waves in surveys of the form described above. Although this assumption is somewhat unrealistic, especially if results from the first wave show a high response rate, it will serve for an illustration. Other assumed response rates may be substituted in the computations that follow. The question then becomes: Is the use of certified mail to increase response rates worth the additional cost?

Assuming a survey model with two mailings and a complete telephone follow-up, the authors have estimated the general administrative cost (including overhead) of preparing materials for mailing, keeping records, and checking-in data, to be $2.00 per student for first class mail and $3.50 per student for certified mail. The total cost for a survey may be estimated by the formula

Total Cost = Initial Cost + 1st Mail Cost + 2nd Mail Cost + Telephone Follow-up Cost.

We will illustrate use of determining the total cost with two cases. One case involves a short questionnaire with less than ten items and assumes telephone cost to be $10.00 per follow-up student. The other case will involve a long questionnaire with approximately 150 individual items, which assumes a cost of $15.00 per follow-up student. Of course, other cases could be designed, and the merits of certified mail versus first class mail should be assessed for individual surveys.

Case I: Short Questionnaire

Four possibilities exist for using first class mail and certified mail. Assuming a 41.7% response rate for certified mail and a 26.7% response rate for first class mail and $0.16 postage, the total costs for

the four combinations of mailing are approximately:

(a) $3.5N + .81N + (.583)(.81)N + [1-(.417 + (.417)(.583))] \times 10N$
$= \$8.182N$ (Certified mail on both mailings);

Initial Cost (3.5N) + 1st Mail Cost (.81N) + 2nd Mail Cost ((.583)(.81)N) + Telephone Follow-up Cost ([1-(.417 + (.417)(.583))] x 10N). Initial cost is determined by taking the general administrative cost multiplied by the number in the survey. Each person in the survey will receive a piece of mail on the first wave with a postage of \$0.81 = \$0.65 + \$0.16. Since 41.7% will return surveys, 1 - .417 = .583 represents the proportion of the total sample who will receive a second questionnaire. Since 41.7% of those sent materials on the first will respond and 41.7% of the .583N who were sent materials on a follow-up will respond, the number of individuals requiring phone calls will be [1-(.417 + (.417)(.583))]N.

(b) $2.0N + .16N + (.16)(.733)N + [1-(.267 + (.267)(.733))] \times 10N$
$= \$7.647N$ (First class mail on both mailings);

(c) $2.0N + .16N + (3.5-2.0)(.733)N + (.81)(.733)N + (1-(.267 + (.417)(.733))) \times 10N = \$8.124N$ (Certified mail on second mail only); and

(d) $(3.5-(3.5-2.0)(.583))N + (.81)N + (.16)(.583)N + [1-(.417 + (.267)(.583))] \times 10N = \$7.802N$ (Certified mail on first mail only).

Using these cost and response rate assumptions, it appears as though the most cost-effective plan is to use first class mail on both mailings, with a complete telephone follow-up.

Case II: Long Questionnaire

The total costs for a survey of N subjects, assuming mailing rates of \$0.40, are:

(a) $3.5N + 1.05N + (.583)(1.05)N + [1-(.417 + (.417)(.583))] \times 15N$ = \$10.262N (Certified mail on both mailings);

(b) $2.0N + .4N + .4(.733)N + [1-(.267 + (.267)(.733))] \times 15N$ = \$10.748 (First class mail on both mailings);

(c) $2.0N + .40N + (3.5-2.0)(.733)N + (1.05)(.733)N + [1-(.267 + (.417)(.733))] \times 15N$ = \$10.675 (Certified mail on second mailing only); and

(d) $(3.5-(3.5-2.0)(.583))N + (1.05N + (.4)(.583)N + [1-(.417 + (.267)(.583))] \times 15N$ = \$10.313 (Certified mail on first mail only).

On the basis of these calculations, it does appear that certified mail on both mailings is a cost-effective procedure.

Conclusions

One could make other calculations with other assumptions and cost figures to determine the cost-effectiveness of a given plan. As can be seen from the above cases, certified mail is not necessarily more cost-effective than first class mail. In general, when telephone follow-ups are expensive, certified mail enjoys a slight advantage. If only the base cost for certified mail were used (\$0.30 plus postage), certified mail might fare better. The authors recommend that the cost-effectiveness of alternative mail survey plans be considered, in the manner illustrated above, prior to their either being proposed or implemented.

Reference

Astin, A. W., & Panos, R. J. The educational and vocational development of college students. Washington, D. C.: American Council on Education, 1969.